



IFW

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q96579

Satoshi KADOKAWA, et al.

Appln. No.: 10/590,008

Group Art Unit: Unknown

Confirmation No.: 6887

Examiner: Unknown

Filed: August 21, 2006

For: ROLLING SLIDING PARTS

**SUBMISSION OF ENGLISH TRANSLATION OF
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants hereby submit an English Translation of the International Preliminary Report on Patentability (Form PCT/IB/338,373 and PCT/ISA/237) for the above-identified application.

Respectfully submitted,

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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: December 5, 2006

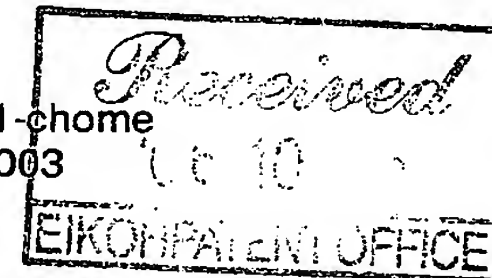
From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

OGURI, Shohei
Eikoh Patent Office
7-13, Nishi-Shimbashi 1-chome
Minato-ku, Tokyo 1050003
JAPON



Date of mailing (<i>day/month/year</i>) 28 September 2006 (28.09.2006)	
Applicant's or agent's file reference P05220800	IMPORTANT NOTIFICATION
International application No. PCT/JP2005/002596	International filing date (<i>day/month/year</i>) 18 February 2005 (18.02.2005)
Applicant NSK Ltd. et al	

1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
34, chemin des Colombettes
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Authorized officer

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference P05220800	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2005/002596	International filing date (<i>day/month/year</i>) 18 February 2005 (18.02.2005)	Priority date (<i>day/month/year</i>) 20 February 2004 (20.02.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant NSK Ltd.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 19 September 2006 (19.09.2006) Authorized officer <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Masashi Honda</div> e-mail: pt08@wipo.int
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PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference
P05220800

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/002596

International filing date (day/month/year)
18.02.2005

Priority date (day/month/year)
20.02.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant
NSK Ltd.

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/002596

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

_____, which is the language of a translation furnished for the purposes of international search (under

Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/002596

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims		YES
	Claims	1-10	NO
Inventive step (IS)	Claims		YES
	Claims	1-10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: JP 2001-304267 A (Nissan Motor Co., Ltd.), 31 October 2001, Paragraphs 0001, 0045-0049, and 0075; Figs. 1-5 (Family: none)</p> <p>Document 2: JP 9-42293 A (Koyo Seiko Co., Ltd.), 10 February 1997, Paragraphs 0001 and 0006-0011; Figs. 1 and 2 (Family: none)</p> <p>Document 3: WO 1997/019279 A1 (Koyo Seiko Co., Ltd.), 29 May 1997, Page 1, line 3 to page 5, line 4, Figs. 1A, 1B, and 2-4 & US 5885690 A, column 1, line 3 to column 4, line 18; Figs. 1A, 1B, and 2-4 & EP 805291 A1</p> <p>The inventions of claims 1-10 do not appear to possess novelty or to involve an inventive step based on document 1 cited in the ISR. Document 1 describes a rocker arm, bearing parts, and needle bearing parts configuring a roller cam follower with surface projections and recesses with a height difference of 0.2 μm or less. A "height difference of 0.2 μm or less" means that at a location deeper than 0.2 μm from the top surface the cross section is 100% in regard to the virtual area in plane direction, and the requirements specified by the claims of this application are satisfied.</p> <p>The inventions of claims 1-10 do not appear to involve an inventive step based on document 2 cited in the ISR. For approximately the same purpose as the invention of this application, namely formation of an oil film between rolling or sliding parts and their mating parts for the prevention of wear from direct contact with the mating parts, document 2 describes specifying the ratio of the cross section area sum of the projections cut by a plane at a position with a specified depth from the top surface in regard to the total area for a surface of rolling or sliding parts having random projections and recesses. As no critical meaning can be found for the depth position from the top surface and the ratio of the cross section area at that position as specified in claims 1-6, this point is a matter to be specified suitably by a person skilled in the art on the basis of experiment results, use conditions, etc. Application of this to rocker arm follower, inner race, shaft, and needles of a rocker arm as in claims 7-10 can easily be conceived of by a person skilled in the art.</p>			

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/002596

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

The inventions of claims 1-10 do not appear to involve an inventive step based on document 3 cited in the ISR. For approximately the same purpose as the invention of this application, namely for the purpose of forming a stable oil film between cam follower roller and cam of a rocker arm, document 3 describes a configuration satisfying the relation of $R_{pk}/R_y \leq 0.1$, with the maximum height (R_y) of the coarseness curve of the cam follower roller surface as 1-3 μm and the attenuation peak height obtained from the coarseness curve on the basis of the load curve as R_{pk} . From the descriptions concerning the attenuation peak height (P_{pk}) in document 3, it is obvious for a person skilled in the art that the surface has no (few) parts with extreme protrusions. On the other hand, claims 1-6 of this application qualitatively also mean that the surface has no (few) parts with extreme projections. Then the invention of this application and the invention described in document 3 have the same purpose and the same qualitative technological idea. Then, as no critical meaning can be found for the concrete numerical limitations described in claims 1-6, this point is a matter to be set suitably by a person skilled in the art on the basis of experiment results, used conditions, etc. The point of applying this to inner race, shaft, and needles as described in claims 9 and 10 also can easily be conceived of by a person skilled in the art.